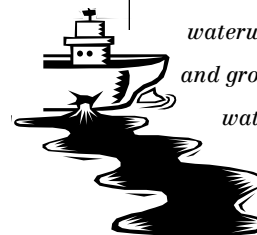


VEHICLE MAINTENANCE

Whether your organization owns one vehicle or a thousand, you can do a lot to reduce your vehicles' environmental impact. For example, choosing less toxic antifreeze protects wildlife, as does properly disposing of used oil. And choosing retreaded tires decreases the amount of waste going to landfills.

In this report, we focus on simple ways to prevent pollution, waste, and toxicity through vehicle maintenance—from routine tune-ups to your choice of oils, coolants, parts and cleaning chemicals.

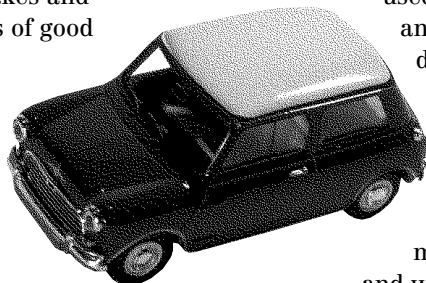
Each year, through routine changes of engine oil, Americans dump the equivalent of 16 Exxon Valdez spills into the nation's waterways and ground-water.



Driving Green

You're probably familiar with the myriad of environmental impacts caused by using and maintaining motor vehicles. For example, 350 million gallons of used oil are dumped into the environment each year, potentially contaminating lakes and streams. Millions of good tire casings are discarded (often to burn later in landfills) only because the outer surface is worn. Untold numbers of animals die from ingesting toxic antifreeze

spilled on the road. Leaky air conditioners release chlorofluorocarbons, which deplete the stratospheric ozone layer, our only shield from the most harmful ultraviolet radiation. Toxic solvents that emit smog-causing vapors are used to clean auto parts and are then discarded as hazardous waste. Overall, poorly maintained vehicles use more fuel, emit more air pollutants, and wear out sooner than their properly maintained counterparts.



DEAR ENVIRONMENTAL PARTNERS

This issue of the *Choose Green Report* is dedicated to vehicle maintenance and outlines ways that you can start reducing the environmental impact of your vehicles today. We focus on several key areas where you can have the most significant impact on the environment—choosing recycled fluids and parts, choosing appropriate coolants and cleaners, and preventive maintenance. We also identify 13 products that have less environmental impact than their traditional alternatives.

We hope you find this information useful, and we welcome your comments.

Norman L. Dean, President

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Four Opportunities to Buy Recycled

Using recycled fluids and parts is a simple and immediate way for you to start reducing the pollution associated with your vehicles. Recycling reduces the amount of chemicals that are produced and that eventually wind up in the environment.

1 Engine oil. Annually the U.S. generates hundreds of millions of gallons of waste lubricating oil that could be re-refined into oil that's as good as new. Next time you change the oil in your vehicles, send the used oil to a manufacturer that filters out impurities and additives and re-refines it, such as Safety-Kleen. For your replacement oil, choose re-refined oil that meets standard industry specifications for performance (such as those of the Society of Automotive Engineers and the American Petroleum Institute). We list a number of re-refined oils in the chart on page 3; but only one of those—Safety-Kleen's America's Choice—has been awarded the Green Seal.

2 Engine coolant. Coolant is also readily recyclable. We recommend recycled coolant over virgin, because it can be filtered and made as good as new while at the same time reducing the amount of chemicals that may wind up in the environment.

When purchasing engine coolants, you can go beyond just "buying recycled" by choosing propylene glycol (PG) coolant instead of ethylene glycol. Although the two perform comparably in most conditions,

ethylene glycol is significantly toxic to wildlife, and innumerable pets and wild animals (especially birds and mammals) are killed by licking the sweet pools of it that leak onto the road. PG, by contrast, is

Look for
propylene
glycol over
ethylene glycol.
Ideally, choose
recycled
propylene
glycol as your
coolant.

approved as a food additive, although it can be toxic in quantity too. PG coolants are listed in the chart on page 3.

3 Tires. Your tires can also be recycled—in a closed loop that returns them as good as new. Although retreaded tires (or re-treads) have become commonplace on many fleet vehicles, including

government vehicles and school buses, they still get undeserved bad publicity because of worn tire casings on the road that are as likely to come from virgin tires. Not only are re-treads safe, but they are also economical and can last much longer than virgin tires. If your used tires are too worn or defective to be retreaded, make sure they are appropriately recycled into rubber products and not landfilled.

4 Parts. Many of your vehicles' engine and body parts can be re-manufactured for reuse. Such parts as starters, alternators, and water pumps are commonly



reused and can be purchased from well-known manufacturers, like Delco. Parts that cannot be reused can be recycled as scrap at a scrap yard or by a local junk dealer.

Keep Your Coolant

If your company's vehicles are air conditioned and are pre-1995 models, make sure that the air conditioning coolant—chlorofluorocarbons (CFCs)—stays in the air conditioning system and does not leak into the atmosphere. CFCs are responsible for depleting the Earth's protective stratospheric ozone layer, thereby threatening all life on Earth. You should have the system checked for leaks on a regular basis, preferably every six months, and any leaks should be immediately repaired. For more information on air conditioning coolants, contact EPA's A/C Coolant Hotline at (800) 296-1996.

Cleaning, Inside and Out

When cleaning your vehicle or its parts, you can reduce hazardous wastes and air and water pollution by choosing environmentally responsible cleaners. For washing the exterior, look for detergents that are non-toxic, biodegradable, and phosphorus-free. (See examples in the chart on this page.) Any runoff water from vehicle washing should be captured and put through an oil/water separator, followed by suitable treatment of the solids, oil, and water (for example, sending the separated water to a wastewater treatment plant).

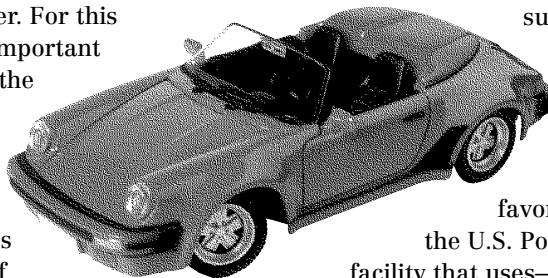
The most environmentally responsible way to clean vehicle parts is still being debated, specifically whether solvents or aqueous-based cleaners are better.

Motor Oils
These oils contain 100% re-refined oil in the base stock and meet API and SAE performance specifications.
<ul style="list-style-type: none">■ Safety-Kleen <i>America's Choice</i>. Green Seal-certified. (800) 525-5739■ Chevron <i>ECO</i>, (800) 582-3835■ Evergreen <i>Motor Oil</i>, (714) 757-7770■ Lyondell <i>Enviroil</i>, (800) 447-4572■ Rosemead <i>SOAR DLX</i>, (800) 794-8400■ Unocal <i>Firebird</i>, (800) 527-5476
Engine Coolants
The following propylene glycol coolants offer a lower toxicity alternative to ethylene glycol coolants.
<ul style="list-style-type: none">■ Fleetguard <i>Complete</i>, (615) 367-0040■ Preston <i>LoTox</i>, (800) 862-7737■ Safebrands <i>Sierra</i> and <i>Sierra Fleet</i>, (402) 341-9397■ Sta-Clean Products Inc. <i>Antifreeze</i>, (800) 825-3464
Car Wash Detergents
These detergents are concentrated, biodegradable and phosphate-free.
<ul style="list-style-type: none">■ Amway <i>Mint Condition</i>, (616) 787-6000■ Procter and Gamble <i>Dawn Ultraconcentrated Dishwashing Detergent</i>, (800) 725-DAWN■ Zep Manufacturing Company <i>Zep-O-Shine</i>, (404) 352-1680

Some maintain that solvents (organic compounds, typically petroleum derivatives) are harmful to the environment, others that aqueous cleaners do not perform as well. The trade-offs make it difficult to favor one product over the other. For this reason, it's important to minimize the amount of cleaner you use by recirculating it. Regardless of the type of cleaner, recirculate it in a filtered system, enabling it to be reused. To ensure the

effectiveness of the system over time, check the filter frequently and keep it clean and clear of debris.

If you side with the solvents in this debate, make sure you're using a non-chlorinated solvent. Our favorite story is of the U.S. Postal Service facility that uses—and is quite satisfied with—Dawn Ultraconcentrated dishwashing detergent as a parts cleaner.



Good Housekeeping

If you have a vehicle maintenance shop, you have many opportunities to prevent spills, improper disposal and unnecessary waste. Try implementing the following simple steps today.

- Avoid aerosol products, which are difficult to recycle and contribute volatile compounds to the air, by using pump-sprays filled from bulk containers.
- If you keep fluids in drums, keep them clearly marked, tightly capped, and protected from impact. Also, be sure drums are on a containment pallet or in a containment facility, and check them frequently for leaks.

- Any chemicals used on the shop floor should be clearly marked and kept in a few discrete locations.
- Be sure also to keep good records of your chemical inventory so you can monitor losses or excessive use.
- Recycle all the packaging you can, particularly the cardboard that accompanies many parts.
- Rags and uniforms should be laundered and reused.

Stay Tuned

The whole point of a maintenance program is to keep your vehicles in good running condition. This approach has

definite environmental benefits: air emissions are lower, fuel mileage is higher, and wasteful repairs are avoided. So don't cut corners on your vehicle preventive maintenance. You will be helping the environment and saving money in the long run.

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